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*On the polarisation of light in non-linear vacuum electrodynamics.*

We consider non-linear electro-dynamical theories of the Plebański class (i.e., with a Lagrangian that depends only on the two Lorentz invariants  $F$  and  $G$  of the electromagnetic field) on an unspecified general-relativistic spacetime. It is known that for all these theories the light rays are null geodesics of two (“optical”) Lorentzian metrics. Here we derive the general transport laws for the polarisation plane along the rays. The procedure is considerably more complicated than in the case of a linear theory because of frequency doubling (also known as generation of higher harmonics). The Born-Infeld and Heisenberg-Euler theories are treated as examples. (Received February 16, 2018)